

Proposed Changes to FS Language on Institutional Controls

Section 2.3 General Response Actions

Section 2.3.2 Institutional Controls (ICs) (Page 40):

Institutional controls generally refer to non-engineering measures intended to affect human activities in such a way as to prevent or reduce exposure to hazardous substances, often by limiting land or resource use. These controls have no ability to reduce ecological exposures. The NCP states that remedies should not rely solely on institutional control and should be implemented in ~~in~~ conjunction with other remedy components. At the site, ICs ~~may (are intended to?) limit human exposure by instituting~~ include a fish consumption advisory and enhanced community outreach program ~~es that will be implemented before, and limiting other activities during, and after implementation of the remedy.~~ Institutional controls may also be used ~~where necessary~~ to protect in-situ caps by limiting one or more waterway and land use activities, from such as boat anchoring and keel dragging, structure and utility maintenance and repair, and future maintenance dredging. Additional institutional controls may be developed during remedial design.

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Section 2.4.4 Summary of Retained Remedial Technologies and Process Options (Page 55):

Institutional controls, including, but are not limited to, commercial fishing bans, fish and shellfish consumption advisories, waterway and land use restrictions, and dredging and structural maintenance restrictions in capping areas.

Section 2.4.5 Selection of Representative Technologies and Process Options (Page 56):

Institutional Controls:

Existing ~~ODOH-OHA~~ fish consumption advisories would continue under any of the remedial actions. Further, enhanced outreach to educate community members about the ~~ODOH-OHA~~ consumption advisories, and to emphasize that advisories would ~~remain be~~ in place before, during, and after remediation ~~would be incorporated into the active remedial alternatives.~~ Outreach activities would focus on specific communities ~~(immigrant communities with strong fishing traditions, tribal members, houseless individuals, and live-aboard boaters typically communities~~ or groups with environmental justice concerns) known to engage in ~~subsistence~~ sustenance fishing, with a special emphasis on sensitive populations (children, senior citizens, pregnant women, and nursing mothers, ~~tribal members~~). ~~These activities could also~~ The elements and outreach mechanisms required for an effective program will be developed through consultation with the targeted community groups and further refined during remedial design ~~as more information on their effectiveness through periodic surveys. The advisory and outreach program is~~ include anticipated to include:

- Informational meetings, presentations, and workshops targeting affected community groups;
- Development and distribution of informational materials such as brochures or maps;
- Advisory notifications communicated through a variety of culturally appropriate outlets;

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- Design, installation, and maintenance of illustrative and multilingual advisory signs at known fishing locations;
- Coordination with sport or recreational fishing clubs and licensing locations;
- Periodic surveys to identify and evaluate changes in fisher populations, practices, and consumption patterns;
- Improved access to public fishing sites with low level contamination, where remedial actions are prioritized, and where outreach and monitoring are focused~~Coordination and construction of public access to alternate fishing locations; and~~
- A multi-year radio tagging survey to evaluate the behavior, habitat use, and movement of resident fish across a range of temporal, environmental, and anthropogenic conditions; and
- Long-term fish tissue sampling for contaminants of concern.

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Additional institutional controls such as waterway and land use restrictions or special conditions (e.g., to protect the integrity of engineered caps) imposed on sediment disturbance activities could also be implemented as components of alternatives comprising active remedial measures.

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Section 3.3 Sediment Management Areas

Section 3.3.4 Removal Technologies:

Section 3.3.4.3 Institutional Controls (Page 83): Fish Consumption Advisories: Fish consumption advisories (described in Section 2.4.5) would be required during dredging activities. Outreach would be conducted to educate the public about the fish consumption advisories. Informational materials and surveys of fish consumption patterns will be ~~needed~~ performed and evaluated to determine advisory effectiveness.

Section 3.3.6 Enhanced Monitored Natural Recovery

Section 3.3.6.2 Institutional Controls (Page 89): Institutional controls (ICs) will be used to prevent or limit exposure to contaminants on both a short-term and long-term basis.

Fish Consumption Advisories: Fish consumption advisories (described in Section 2.4.5) would be required until such time as RAO 2 is achieved as demonstrated through fish tissue monitoring~~sediment?~~. Outreach would be conducted to educate the public about the fish consumption advisories. Informational materials and surveys of fish consumption patterns will be needed and evaluated to determine advisory effectiveness. The advisory program will be updated over time, as needed, to address changes in fisher populations and consumption patterns.

Section 3.4 Swan Island Lagoon

Commented [A1]: Same as 3.3.6.2

Section 3.4.3 Institutional Controls (Page 90): Institutional controls (ICs) will be used to prevent or limit exposure to contaminants on both a short-term and long-term basis.

Fish Consumption Advisories: Fish consumption advisories would be required until such time as RAO 2 is achieved. Outreach would be conducted to educate the public about the fish consumption advisories. Informational materials and surveys of fish consumption patterns will be needed and evaluated to determine advisory effectiveness.

Section 3.5 Remaining Areas

Commented [A2]: Same as 3.3.6.2

Section 3.5.3 Institutional Controls (Page 92): Institutional controls (ICs) will be used to prevent or limit exposure to contaminants on both a short-term and long-term basis.

Fish Consumption Advisories: Fish consumption advisories would be required until such time as RAO 2 is achieved. Outreach would be conducted to educate the public about the fish consumption advisories. Informational materials and surveys of fish consumption patterns will be needed and evaluated to determine advisory effectiveness.

Section 3.6 Development of Alternatives

Section 3.6.1 Common Elements (Page 94):

Institutional Controls

Fish consumption advisories (described in Section 2.4.5) would be implemented before, during, and after construction until PRGs are met. All caps will require waterway use or regulated navigation restrictions, and land use or access restrictions, long-term monitoring and O&M.

Section 4.2 Detailed Analysis of Remedial Alternatives

Section 4.2.1 Alternative A: No Action

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Section 4.2.1.3 Long-Term Effectiveness and Permanence (Page 124):

Adequacy and Reliability of Institutional and Engineering Controls

There are no engineering or institutional controls under this alternative; however fish consumption advisories currently issued by OHA would continue. Studies show that the existing advisories are not sufficiently effective in protecting human health since, despite their presence, some anglers still eat their catch and bring their catch home for their families to eat (May and Burger, 1996; Burger et al, 1999; Kirk-Pflugh et al, 1999 and 2011), although there is some evidence that fish advisories increase awareness of the benefits and risks of consuming fish (Engelbirth et al; 2013). In addition, consumption advisories are ineffective in reducing risk to ecological receptors.

Section 4.2.2 Alternative B

Section 4.2.2.3 Long-Term Effectiveness and Permanence (Page 138):

Adequacy and Reliability of Engineering and Institutional Controls

Sediment removal, capping, and thin layer covers are reliable and proven technologies as long as they are designed for the appropriate environmental and anthropogenic conditions. Offsite thermal destruction (incineration) and land-based disposal facilities are in operation and have proven to be reliable technologies.

Alternative B would be effective in limiting exposure to risks posed by COCs in the sediments and riverbank soils provided the integrity of the caps is maintained. Therefore, the caps would need to be monitored and maintained in perpetuity. Reviews at least every five years, as required, would be necessary to evaluate the effectiveness of any of these alternatives because hazardous substances would remain on-site in concentrations above levels that allow for unlimited use and unrestricted exposure.

Operation and maintenance activities, ICs and long-term monitoring will be implemented to assure protectiveness and reliability of caps and thin layer covers. The following paragraphs further describe how these activities maintain the protectiveness and reliability of these controls:

- O&M will be required for material left in place and may include bathymetric surveys and diver performed monitoring at regular intervals to confirm the thickness of thin layer sand covers and capping materials. In addition to regular surveys, supplemental surveys will be performed following episodic natural and anthropogenic events that have the potential to disturb caps and sand covers. ICs include governmental controls, proprietary controls and informational devices. The reliability of institutional controls ICs can be enhanced through activities such as regular inspection of buoys and other devices to delineate regulated navigation areas, administrative procedures and inspections to ensure the maintenance of co-located structures and ongoing public outreach efforts to enhance the effectiveness of informational devices. Coordination will need to occur with federal and state regulatory authorities during future permitting activities that may disturb subsurface contaminated sediment or capped areas. Additional institutional controls (see Table 2.4-2) would be necessary to maintain cap integrity in perpetuity.
- Existing advisories, which rely on voluntary compliance, are not sufficiently effective in protecting human health. Fish consumption advisories, which rely on voluntary compliance, would be enhanced by additional outreach and surveys of fisher populations and consumption patterns as described in Section 2.4.5 to improve their effectiveness in reducing risk to human health by limiting exposure to COCs.
- Monitoring of the effectiveness of the remedial alternative would include sampling of the water column, sediment, and biota tissue before, during and after construction to verify that risks to the ecosystem continue to decrease. The planned post-construction monitoring program would result in collection of the data necessary to determine whether the fish consumption advisory or other restrictions imposed as part of the remedial action could be relaxed. Tissue PRGs based on the consumption of 19 eight-ounce fish meals per month were developed for use during the post-construction monitoring period to evaluate if contaminant concentrations are decreasing toward PRGs as expected.

Section 4.2.3 Alternative D

Section 4.2.3.3 Long-Term Effectiveness and Permanence (Page 138):

Adequacy and Reliability of Engineering and Institutional Controls

Same as B, except:

Alternative D would provide additional controls and be more effective in reducing exposure to risks posed by COCs in the sediments and riverbank soils provided by the increased area of capped material in the site relative to Alternative B. Additional O&M, ICs and monitoring would be required than Alternative B due to the increase in the acreage of caps.

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Section 4.2.4 Alternative E

Section 4.2.4.3 Long-Term Effectiveness and Permanence (Page 160):

Adequacy and Reliability of Engineering and Institutional Controls

Same as B, except:

Alternative E would provide additional controls and be more effective in reducing exposure to risks posed by COCs in the sediments and riverbank soils provided by the increased area of

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capped material in the site relative to Alternative D. Additional O&M, ICs and monitoring would be required than Alternative D due to the increase in the acreage of caps.

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